

February 25, 2000

Docket Clerk
U.S. DOT Dockets
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400 Seventh St., S.W.
Washington, D.C. 20590-0001

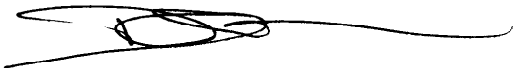
To Whom It May Concern: 46

Please include into the record the attached comments regarding Docket No. FHWA-97-2979 as my written testimony in opposition to the use of non-certified on-board trailer scales for use by the moving and storage industry or any other commercial transaction.

The authorized use of scales not certified by a statutory official in any commercial transaction would cause undue hardship on consumers. The FHWA is encouraged to place this issue in the hands of NIST Office of Weights and Measures and the National Conference on Weights and Measures for evaluation of the Air-Weigh on-board system. Other on-board scale manufacturers have followed this established policy and have received NTEP certification.

I would be glad to be of further assistance or to answer any questions. I can be contacted by telephone at (901) 253-1424.

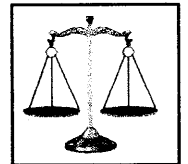
Sincerely,



David W. Quinn
President

cc: Dr. Gilbert M. Ugiansky
Chief NIST/OWM

G.W. Diggs
Chairman NCWM



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Docket No. FHWA-97-2979

Written Testimony of
David W. Quinn
Weighing Consultants, Inc.
Southport, North Carolina
(901) 253-1424

I just became aware that the FHWA is soliciting comments regarding the accuracy, reliability and acceptability of non-certified on-board trailer scales and offer the following for your consideration.

First let me state that on-board weighing systems for trucks and trailers are available that meet the tolerance requirements for commercial application which are 0.1% of the applied (net) load. Attached find NTEP Certificate of Conformance 99-091 issued to NORAC Systems International for such a system. The request by Air-Weigh for the FHWA to accept their technology which based on the data that follows are accurate at best to 1.0% of applied load should be rejected based on product already available that meets commercial requirements.

The on-board weighing devices being considered are manufactured by Air-Weigh and based on written testimony of Mr. Martin Ambrose, CEO of Air-Weigh the accuracy of the on-board scales is stated as, "Once calibrated, the scale displays the on-the-ground weight of each axle group within 200-300 pounds of an accurate platform scale." I am not sure of the significance of stating the weight on each axle group, however if the potential error is 200-300 pounds on both the trailer axle group and on the tractor axle group the cumulative weight error could be 400-600 pounds. However giving the benefit of the doubt to the Air-Weigh device we can assume a difference of 200 to 300 pounds as the system differential from a certified vehicle scale.

I recently made a household move and the net weight of the household goods was 9540 pounds. This represented the contents of a four bedroom house and above the average net weight of a household move. On a certified platform scale the tolerance allowed on this 9540 pounds would be +/- 20 pounds. (See Table 6 NIST Handbook 44 Class IIIL scale). The 200-300 pound weight differential stated by Air-Weigh is 10 to 15 times greater. If in fact the differential of the Air-Weigh system is 200-300 pounds per axle group the differential from a certified scale would be 20 to 30 times greater than the presently allowable tolerance. Handbook 44 also states the allowable tolerance for Class III scales, allowed for use by law enforcement only, at a maximum of 5 divisions which would be 100 pounds on an axle scale. The Air-Weigh product accuracy is stated as 2 to 3 times the generous Class III tolerance.

The FHWA should continue the policy of requiring all weights to be determined on scales certified by a states Weights and Measures Department. This policy will continue to ensure equity in the marketplace and leave the statutory authority for weights and measures with the states. The National Conference on Weights and Measures and NIST Office of Weights and Measures have always encouraged the development of new technology and evaluate many new weighing device types each year under the National Type Evaluation Program (NTEP). Air-Weigh should be encouraged to submit their product to the NTEP for evaluation as their competitor NORAC System International did.

END

National Type Evaluation Program
Certificate of Conformance
for Weighing and Measuring Devices

For:

On-Board Weighing System
Complete Vehicle Mounted Electronic Scale
Model: ANXXL-Y*
 n_{\max} : 5000
 e_{\min} : 0.2
Capacity: 1000 lb to 40 000 lb

Accuracy Class: III/III L

Submitted by:

NORAC Systems International Inc.
803 46th Street East
Saskatoon, Saskatchewan S7K 0X1
Tel: 306-664-6711 x 304
Fax: 306-664-6664
Contact: Dean Hockley

Standard Features and Options

Load Cell: Rice Lake Weighing Systems Model RL20000A-XXXX (Certificate of Conformance Number 90-158) or NTEP approved equivalent.

Indicator: Western Scale Co. Model DF2000 (Certificate of Conformance Number 87-029) or certified equivalent.

* Model number denotes capacity and number of load cells, where XX is the capacity in thousands of pounds and Y describes the number of load cells in the system. Model numbers covered by this certificate are in the range of AN1.0L-(Y) to AN40L-(Y), inclusive (see table). The number of load cells and platform dimensions vary depending on the vehicle/trailer dimensions and the size of the commodity receiving element.

The device tested and performed within tolerance up to six degrees out of level.

Model Number	Capacity Max (lb)	e (lb)	d (lb)	Class
AN1.0L-Y	1000	0.2	0.2	III
AN2.0L-Y	2000	0.5	0.5	III
AN5.0L-Y	5000	1	1	III
AN10L-Y	10 000	2	2	III
AN15L-Y	15 000	5	5	III/III L
AN20L-Y	20 000	5	5	III/III L
AN25L-Y	25 000	5	5	III/III L
AN30L-Y	30 000	10	10	III/III L
AN35L-Y	35 000	10	10	III/III L
AN40L-Y	40 000	10	10	III/III L

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: June 10, 1999

Gilbert M. Ugiansky, Ph.D.
Chief, Office of Weights and Measures
Issue Date: September 20, 1999

Note: The National Institute of Standards and Technology does not "approve," "recommend," or "endorse" any proprietary product or material, either as a single item or as a class or group. Results shall not be used in advertising or sales promotion to indicate explicit or implicit endorsement of the product by the Institute. (See NTEP Policy and Procedures.)

NORAC Systems International Inc.
On-Board Weighing System
Model: ANXXL-Y

Application: Vehicle or trailer mounted scale, used for weighing bulk products in a static condition.

Identification: The required information is located on an identification plate riveted on the side of the scale frame.

Sealing: There are no means of calibration at the scale. All calibration is done through the indicator/controller. The indicator/controller is sealed per the manufacturer's specifications.

Operation: The device is designed to be mounted on a vehicle or trailer. The unit is parked in a location that is no greater than six degrees out-of-level (in any direction). A level lamp on the indicator/controller shows the operator if the scale is within the operating limits. If the scale is outside the operating range, the level lamp will not be illuminated and the indicator will turn off automatically.

The operator activates the lift mechanism to raise the scale into the working position. The weight registration on the display will show the starting weight. Press the "start" button on the controller to print the starting weight. Unload chutes or hoses to be connected and the commodity transfer can begin. Once complete, the chutes and hoses must be returned to their original position. The weight registration on the display will show the net weight. The "end" button on the controller will print the amount of product transferred and release the ticket from the printer. Optionally, if no printer is connected, the operator can simply record the starting and ending weights manually.

The operator activates the lowering mechanism to lower the scale into the transport position, and the vehicle or trailer can proceed to its next delivery location.

Test Conditions: The emphasis of the evaluation was on the design, operation, performance, permanence, and marking requirements. For the purpose of this evaluation three models were tested. Two truck-mounted (Models AN10L-3 and AN15L-3) and a trailer mounted (Model AN40L-4) were interfaced with a Western Scale Co. Model DF2000 (Certificate of Conformance Number 87-029). The scales were loaded by placing certified weights on racks specially designed for load receiving elements. Out-of-level testing was accomplished using the manufacturer's hydraulic incline fixture.

Several increasing/decreasing load and off center loading tests were conducted using 1000 lb, 15 000 lb, and 40 000 lb of known test weights. Testing was conducted with the devices out-of-level six degrees in all four directions (i.e., front, back, right side and left side). Testing was also conducted with the devices three degrees out-of-level in a twist condition (i.e., one rear set of wheels raised). The devices were tilted beyond the maximum angle to insure the indicator would blank-out properly.

The scale was used for a period with the minimum requirements by NIST being met and retested in the same manner.

The results of the evaluation indicate the device complies with applicable requirements of NIST Handbook 44.

Type Evaluation Criteria Used: NIST Handbook 44, 1999 Edition

Tested By: A. McCoy (OH)